UNITED STATES DEPARTMENT OF AGRICULTURE



INVENTORY No.



Washington, D. C.



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SEEDS AND PLANTS IMPORTED BY THE OFFICE OF FOREIGN PLANT INTRODUCTION, BUREAU OF PLANT INDUSTRY, DURING THE PERIOD FROM OCTOBER 1 TO DECEMBER 31, 1923 (S. P. I. NOS, 58024 TO 58454)

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INTRODUCTORY STATEMENT

The introduction of hardy plant material from northeastern Asia has long been one of the main objects of the Office of Foreign Plant Introduction of the Bureau

Disturbed political conditions since the outbreak of the Great War have made it impracticable to send agricultural explorers into that region, else the work in Siberia, Mongolia, and Turkestan, which was commenced by Frank N. Meyer in 1909, would have been pursued with vigor. It therefore is with great satisfaction that announcement is made that Prof. T. D. A. Cockerell, of the University of Colorado, has sent to this office a large collection of seeds obtained by him during a recent journey through parts of southeastern Siberia. These seeds, which are listed in this inventory under Nos. 58153 to 58357, represent numerous varieties of oats, buckwheat, barley, flax, proso, rye, timothy, wheat, soy beans, corn, and other field crops, as well as a few vegetables. They have been distributed to specialists of the department for preliminary testing.

H. V. Harlan, of the Office of Cereal Crops and Diseases, Bureau of Plant Industry, who left Washington early in 1923 to study barley and other cereal crops in the Mediterranean region, India, and Abyssinia, sent from Spain a collection of seeds, including 8 varieties of oats (Avena sativa; Nos. 58042 to 58049), 19 of barley (Hordeum vulgare pallidum; Nos. 58050 to 58068), and 12 of wheat (Triticum aestivum; Nos. 58074 to 58085).

For use in connection with studies of the host plants of wheat rust which the department is conducting, a large number of species and varieties of Berberis have been assembled from time to time. The present inventory records a aumber of additions, including 3 from Rochester, N. Y. (Nos. 58088 to 58090), 34 from the Arnold Arboretum at Jamaica Plain, Mass. (Nos. 58093 to 58126), 3 from the Botanic Gardens at Glasnevin, Ireland (Nos. 58131 to 58133), and 3 from the Royal Botanic Gardens at Kew, England (Nos. 58136 to 58143).

J. F. Rock's travels in the remote Province of Yunnan, China, continue to vield interesting plants. Among his introductions listed in this inventory some of the most promising seem to be the white-flowered Prunus (No. 58040), the wild apple from Likiang (Malus sp.; No. 58087), and nine species of Primula Nos. 58368, 58375, 58398 to 58402, 58405, and 58426). His new Castanopsis (C. delavayi; No. 58394) is described as one of the finest and hardiest timber

trees of its region, and it bears in addition a sweet edible nut.

The Chilean strawberry (Fragaria chiloensis; No. 58024), of which several earlier introductions have been made by this office, is proving of much interest to plant breeders in the United States, who are using it to cross with North American strawberries in the hope of producing new forms having their excellent color and flavor combined with the firm texture of the Chilean berry.

Agati tomentosa (No. 58377), received from the Hawaiian Islands through C. S. Judd, should be especially interesting for trial in the Southern States where Sesbania macrocarpa succeeds. If it is as palatable to stock as Mr. Judd's note indicates and should prove as resistant to nematodes as is S. macrocarpa in the

South, it may prove to be quite worth while.

An unusually large number of promising tropical fruits have been received during the period covered by this inventory. The marang (Artocarpus odoratissima; No. 58025), which P. J. Wester considers a fruit of unusual promise, has again been introduced for trial in the American Tropics. A new lot of mangosteen seeds (Garcinia mangostana; No. 58027), supplied through Vilmorin-Andrieux & Co., of Paris, will be used to provide plants for establishing small orchards of this excellent fruit in the Canal Zone and other parts of tropical America where a few scattered tests have shown that it can be cultivated with The ilama of Mexico (Annona diversifolia) has fruited at the United States Plant Introduction Garden, Miami, Fla., from seeds introduced by this office several years ago. Its behavior indicates that it may prove a valuable acquisition for southern Florida; plants grown from the seed presented by Dr. C. A. Purpus (Nos. 58030 and 58408) will therefore be used to test this species further in the warmest parts of that State. Mango growers in Florida and the American Tropics generally should devote special attention to the Carabao variety (Mangifera indica; No. 58031), which has proved to be a more dependable bearer than most of the Indian sorts at the Miami garden and is at the same time a fruit of excellent quality. The wild avocado of Costa Rica, which may possibly be an ancestor of some of the cultivated avocados, was originally introduced by this office in 1920 for trial as a stock on which to graft the cultivated plants. preliminary tests indicate that it may not prove suitable for this purpose, it has seemed advisable to procure an additional lot of seed (*Persea americana*; No. 58365) in order to test the matter thoroughly. The Winslowson avocado (*Persea americana*; No. 58444), a seedling grown at the garden at Miami, has been planted commercially in a number of Florida orchards, where it is proving valuable because of its vigor, its productiveness, its late season of ripening, and the good quality of its fruit. The langsat (Lansium domesticum; No. 58382) is probably too tropical in its requirements for cultivation anywhere in the continental United States, but it should succeed in the Canal Zone, Porto Rico, and elsewhere in the American Tropics.

The director of the Royal Botanic Gardens, Kew, England, has sent a number of promising ornamental plants, including seven Cotoneasters (Nos. 58145 to 58151), one Cornus (No. 58144), and one Hydrangea (No. 58152). The American consul at Teheran, Persia, has sent seeds of the best Persian tobacco (Nicotiana tabacum; No. 58029). A variety of sugar cane (Saccharum officinarum), considered by the director of the Insular Experiment Station, Porto Rico, the most valuable seedling at present planted on the island, is represented by No. 58034. S. K. Mitra, economic botanist to the Government of Assam, sends a broomcorn mutant (Holcus sorghum; No. 58129) which will be tested in this country with Eremochloa ophiuroides (No. 58389) is being tried as a lawn grass. Tests with earlier introductions of this grass have shown that it is suited for this purpose in Florida and the Gulf coast area of the Southern States. Varieta! differences have been observed and further introductions may give better adapted or more valuable strains. A valuable strain of Lespedeza striata (No. 58397), originally collected by J. B. Norton in 1919 near Kobe, Japan, has been numbered, so that its history will become a matter of record. Its strong-growing

quality makes it superior to common lespedeza.

The botanical determinations of these introductions have been made and the nomenclature determined by H. C. Skeels, and the descriptive matter has beer prepared under the direction of Paul Russell, who has had general supervision or this inventory.

> ROLAND MCKEE, Acting Senior Agricultural Explorer in Charge.

OFFICE OF FOREIGN PLANT INTRODUCTION, Washington, D. C., January 7, 1926.

INVENTORY

58024. Fragaria Chiloensis (L.) Duchesne. Rosaceæ.

Chilean strawberry.

From Honolulu, Hawaii. Seeds presented by Dr. H. U. Lyon, in charge, Department of Botany and Forestry, Experiment Station of the Sugar Planters' Association. Received October 1, 1923

Seeds sent to Doctor Lyon from Ecuador by. Francis X. Williams.

Although the fruit of the Chilean strawberry is nferior in flavor to that of our best cultivated trawberries, it is remarkable for its excellent shipping and keeping qualities, and it seems that varieties might be produced by selection that would nerit cultivation on a commercial scale. The berry s much used for canning and preserving and is also aten fresh. The ripening season of Fragaria hiloensis in the highlands of southern Peru and sentral Chile extends approximately from the latter part of October to January.

For previous introduction see S. P. I. No. 56023.

58025. Artocarpus odoratissima Bianco. Moraceæ. **Marang**.

From Manila, Philippine Islands. Seeds presented by Adn. Hernandez, director, Bureau of Agriculture. Received October 3, 1923.

The marang has been brought recently to the ttention of horticulturists by P. J. Wester, who onsiders it a fruit of unusual promise. It resembles the jack fruit and the seeded breadfruit in ppearance but is superior in quality to either of hese. The tree, which grows wild in the southern hilippine Islands and the Sulu Archipelago, is nedium sized, with large dark-green entire or lobed leaves 18 to 24 inches long. Wester (Food lants of the Philippines, ed. 3, p. 129) describes he fruit as roundish oblong in form, about 5 inches a length, with the surface thickly studded with oft greenish yellow spines one-third of an inching. The rind is thick and fleshy, the flesh white, weet, juicy, aromatic, and of pleasant flavor; it is apparated into segments (about the size of a grape) which cling to the core, and each segment contains whitish seed nearly half an inch long. When the uit is ripe, by passing a knife around and through he rind, with a little care the halves may be seprated from the flesh, leaving this like a bunch of hite grapes. In the Philippines it ripens in neust.

The tree is strictly tropical in its requirements and probably will not succeed in regions where the emperature falls below 32° to 35° F. It likes a lost atmosphere and abundant rainfall.

For previous introduction see S. P. I. No. 46635.

58026. Cucumis melo L. Cucurbitaceæ. Melon.

From Bareilly, United Provinces, India. Seeds presented by Rev. N. L. Rockey. Received October 3, 1923.

Seeds of a melon bought in Alighur but evidently imported from the borders of Afghanistan or Baluchistan. The native name is Zarda. The fruit was yellowish green, weighed 5½ pounds, and the flesh was 1¾ inches thick. (Rockey.)

The culture of the superior kinds of melon requires considerable attention, but there is hardly a fruit that better deserves it. The kind which ranks as finest of all, called the Surdah, is a native of Kabul and has not, that I am aware, been cultivated with success in any part of India. The fruits are brought occasionally to the Punjab for the wealthy natives, and a friend told me that when at Mooltan an offer of 6 rupees which he made for a single one was refused, so highly are they prized. I have several times raised plants in my garden at Firozpur. They throve moderately well but bore only one or two fruits, which always rotted on the under side before beginning to ripen. From a portion of one which remained partially sound I was enabled to discover how delicious this fruit must be when raised in perfection. The seeds of this kind are at once to be distinguished from those of any other, being fully four times larger. (Firminger's Manual of Gardening, ed. 5, p. 225.)

58027. GARCINIA MANGOSTANA L. Clusiaceæ. Mangosteen.

From Paris, France. Seeds purchased from Vilmorin-Andrieux & Co. Received October 4, 1923.

For more than 20 years the Office of Foreign Plant Introduction has been interested in the establishment of the Asiatic mangosteen, reputed to be the "queen of fruits," in the tropical American dependencies of the United States. It was believed for many years that the mangosteen could not be made to bear fruit outside of the Asiatic tropics. There is now a fruiting orchard of more than a dozen trees on the island of Dominica in the West Indies and another of nearly the same size near Guayaquil, Ecuador. Fruit has also been produced in Trinidad, Jamaica, and the Hawaiian Islands. It is evident therefore that when given the proper conditions of climate and soil and appropriate cultural treatment the mangosteen can be grown successfully in many regions. The seeds of this fruit are among the most difficult in the world to transport long distances. In 1922 it was found that seed obtained through Vilmorin-Andrieux & Co., of Paris, reached Washington in better condition than any which had been received previously from any

For previous introduction see S. P. I. No. 56822

It should be understood that the names of horticultural varieties of fruits, vegetables, cereals, and other lants used in this inventory are those under which the material was received when introduced by the flice of Foreign Plant Introduction and, further, that the printing of such names here does not contitute their official publication and adoption in this country. As the different varieties are studied, ieir entrance into the American trade forecast, and the use of varietal names for them in American terature becomes necessary, the foreign varietal designations appearing in this inventory will be subject change with a view to bringing the forms of the names into harmony with recognized horticultural menclature.

It is a well-known fact that botanical descriptions, both technical and economic, seldom mention the eds and rarely describe them in such a way as to make possible identification from the seeds alone. Many the unusual plants listed in these inventories are appearing in this country for the first time, and there e no seed samples or herbarium specimens with ripe seeds with which the new arrivals may be compared, he only identification possible is to see that the sample received resembles seeds of other species of the me genus or of related genera. The responsibility for the specific identifications therefore must necessrily often rest with the person sending the material. If there is any question regarding the correctness the identification of any plant received from this office, herbarium specimens of leaves and flowers should sent in, so that definite identification can be made.

58028. HYPHAENE CRINITA Gaertn. Phœnicaceæ. Palm.

From Pretoria, Union of South Africa. Seeds presented by C. P. Lounsbury, Chief; Division of Entomology. Received October 4, 1923.

A South African fan palm which in some sections of its native country reaches a height of 30 feet. The leaves are used by the natives to make matting, basketware, and rope. From the sap, obtained by tapping the trunk, a native beverage is prepared. (Adapted from Marloth, Flora of South Africa, vol. 4, p. 50.)

58029. NICOTIANA TABACUM L. Solanaceæ. Tobacco.

From Teheran, Persia. Seeds presented through Bernard Gotlieb, American consul. Received October 4, 1923.

Seeds of the finest grade of the Persian tobacco variety known as Shiraz Tumbac. (Gotlieb.)

Introduced for tobacco specialists,

58030. Annona diversifolia Safford. Annonaceæ. Ilama.

From Chiapas, Mexico. Seeds presented by Dr. C. A. Purpus, Zacuapan, Huatusco, Vera Cruz. Received October 6, 1923.

It is now several years since the Office of Foreign Plant Introduction undertook an investigation of this little-known relative of the cherimoya and decided that it is a species worthy of wide cultivation in the Tropics. In these few years several thousand seedlings have been distributed, not alone in America but also in southern Asia and elsewhere. A young tree growing in the United States Plant Introduction Garden at Miami, Fla., came into bearing in 1923. So far as known, this is the first time ilamas have been produced in the United States. The tree has always been very limited in its distribution. It is native to southern Mexico, Guatemala, and Salvador, where it is found usually in footbill regions at elevations not greater than 2,000 feet. In some parts of Mexico it is called "ilama," in Chiapas "papauce," and in Guatemala and Salvador "anona blanca."

The climatic requirements of this tree are similar to those of the sugar-apple and the custard-apple. It will withstand light frost and often grows in regions where the rainfall is light. Seedling trees come into bearing when 4 or 5 years old. The species is not as robust as the cherimoya, rarely reaching more than 20 feet in height and being of somewhat slender growth. The fruit is conical, oval, or round, and weighs from half a pound to a pound or more. The surface is rough, with the carpellary areas indicated by deeply incised lines. The color varies from pale green to magenta pink, overspread with a whitish bloom, whence the common name "anona blanca," or "white anona." In pale-green varieties the flesh is pure white; in pink kinds it is tinged with that color. The flavor is similar to that of the sugar-apple but with more acid. The seeds are about as numerous as in the cherimoya but slightly larger than those of the latter.

58031. Mangifera indica L. Anacardiaceæ. Mango.

From Manila, Philippine Islands. Budwood presented by Adn. Hernandez, director, Bureau of Agriculture. Received October 6, 1923.

"Carabao." Average weight 230 grams; form oblong, asymmetrical, with full cheeks; ventral shoulder usually prominent; dorsal shoulder short; stem inserted squarely or obliquely; base rounded; beak rather indistinct and variable, sometimes coinciding with apex; nak about 15 to 25 millimeters above apex, usually not prominent; surface smooth; color yellowish tinged with green; lenticels light yellow, usually sparse at basal end of fruit, abundant on apical portion; skin medium thin, tough; flesh yellowish, paler than the Pico,

very tender and melting; flavor very delicate, aromatic, and spicy; fiber medium coarse, short, confined almost entirely to edges of seed; seed oblong, medium large; polyembryonic. The similarities in the fruit and trees of the Carabao and the Cambadiana, introduced into Florida from Saigon, Cochin China, are so many and great that the two types would seem to have a common parentage or to have sprung one from the other; this fact perhaps may also indicate the original home of the Carabao mango.

mango.

"The tree is of vigorous growth, with fruit mostly ripening from the latter part of May through June and the early part of July; by smoking the trees (the physiological effect of which is not quite understood) and by chopping the bark of the trunk the Filipinos force the trees to bear fruit early in March, but this fruit is not so well flavored as that produced later. In some sections a few mangos are found in the markets during nearly all the months of the year." (P. J. Wester, Bulletin No. 18, Bureau of Agriculture, Manila, pp. 23 and 24.)

58032. Strychnos suberosa Wildem. Loganiaceæ.

From Kisantu, Belgian Congo. Seeds presented by Frère J. Gillet. Received October 1, 1923.

The fruit of this species is edible. (Gillet.)

A spiny shrub or small tree, with oval leathery dull-green leaves. It is very similar to Strychnos gilleti [S. P. I. No. 5820]. (Adapted from Annales du Musée du Congo, ser. 5, vol. 1, p. 177.)

58033. AVENA STERILIS L. Poaceæ. Oats.

From Lincoln, New Zealand. Seeds presented by Dr. F. W. Hilgendorf, biologist, Canterbury Agricultural College. Received October 10, 1923.

"College Algerians. This strain, also known as A 86, is characterized by high tillering power, a creeping habit, quick recovery after feeding off, and a high yield. Under our conditions of climate and soil it has yielded about 10 bushels per acre more than commercial varieties sown under the same conditions." (New Zealand Journal of Agriculture, vol. 26, p. 147.)

58034. SACCHARUM OFFICINARUM L. Poaceæ. Sugar cane.

From Rio Piedras, Porto Rico. Cuttings presented by R. Menendez Ramos, director, Insular Experiment Station. Received October 10, 1923.

B. H. 10 (12). This Barbados hybrid is, in my opinion, the most valuable cane seedling at present planted on this island. It is a vigorous cane, giving high tonnage in a variety of soils; it is a heavy stooler and good in ratoon crops. At this station it has yielded as high as 22 per cent sucrose in crusher juice at the age of 13 months. It is tolerant to both mosaic and gumming diseases. (Ramos.)

58035. Hibiscus Rosa-sinensis L. Malvaceæ.

From Manila, Philippine Islands. Cuttings presented by Adn. Hernandez, director, Bureau of Agriculture. Received October 17, 1923.

The Chinese Hibiscus is an exceedingly popular ornamental plant in southern Florida, where the single scarlet variety is practically the only one which has been commonly planted up to this time. The department has undertaken to introduce the best forms from other parts of the world, in the hope of diversifying somewhat the ornamental plantings of Florida gardens. The scarlet variety, though a handsome and useful plant, is in danger of becoming monotonous. An excellent collection of new varieties has recently been introduced from the Hawaiian Islands, where much has been done to improve this genus by breeding.

58036. KENNEDIA RUBICUNDA (Schneev.) Vent. Fabaceæ.

From Richmond, Victoria. Seeds presented by F. H. Baker. Received October 11, 1923.

A very attractive twining shrub, sometimes 5 or 6 feet in length, with dark-green oval leaflets 3 to 4 inches long and numerous large showy dark-red flowers which occur in pairs in the leaf axis. This species is native to New South Wales. (Adapted from Sulman, F., Wild Flowers of New South Wales, p. 130.)

For previous introduction see S. P. I. No. 49487.

58037. PENNISETUM SETOSUM (Swartz) L. Rich. Poaceæ. Grass.

From Entebbe, Uganda, Africa. Seeds presented by T. D. Maitland, botanist, Botanic Gardens. Received November 9, 1923.

A robust perennial grass, 2 to 4 feet high, distribated through the Tropics of both hemispheres and often used for forage.

Introduced for forage-crop specialists.

58038. CICER ARIETINUM L. Fabaceæ. Chick-pea.

From Guadalajara, Mexico. Seeds presented by Frank S. Furnivall, horticulturist, through Anthony Sherman, American vice consul in charge. Received October 17, 1923.

Seeds of a small-seeded chick-pea from Jalisco, ntroduced for ferage-crop specialists.

58039 and 58040.

From Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received October 19, 1923. Notes by Mr. Rock.

5303). MAPPIA sp. Icacinaceæ.

(No. 8711. Tsehchung. August, 1923.) A tree 25 feet high which grows on the banks of the Mekong in a region having a rather warm climate. When in flower the tree is very handsome; the flowers, usually white, are in spikes 4 inches long in the leaf axils.

58040. PRUNUS Sp. Amygdalaceæ.

(No. 9929. July, 1923.) A white-flowered tree about 25 feet in height from the slopes of Peima Shan (white-horse mountain), two days' journey southeast of Atuntze, at an altitude of 13,000 feet. The oblong red fruits are scarcely edible, although the Tibetans eat them. The region where this tree grows is quite cold, being covered with snow for a large part of the year.

58041. TRIFOLIUM INCARNATUM L. Fabaceæ. Crimson clover.

From Paris, France. Seeds purchased from Vilmorin-Andrieux & Co. Received October 22, 1923.

Locally grown crimson clover from the Department of Loire, France. Introduced for cultural and comparison tests.

i8042 to 58072.

From Spain. Seeds collected by H. V. Harlan, Bureau of Plant Industry. Received October 13, 1923. Notes by Doctor Harlan.

(September, 1923.) Purchased in agricultural vilages from growers.

58042 to 58049. AVENA SATIVA L. Poaceæ. Oats.

58042. (No. 248. Yuncos.)

58043. (No. 255.)

58044. (No. 257.)

58042 to 58072—Continued.

58045. (No. 265. Duenas.)

58046. (No. 269, Villacastin.)

58047. (No. 276. Monasterio de Bodilla.)

58048. (No. 280. Uzguiano.) Spring oats.

58049. (No. 284. Villar de Arnero.)

58050 to 58068. HORDEUM VULGARE PALLIDUM Seringe. Poaceæ. Six-rowed barley.

58050. (No. 246.) Purchased in the village of

58051. (No. 249, Yuncos.)

58052. (No. 250. Yuncos.)

58053. (No. 252. Arevalo.)

58054. (No. 254.)

58055. (No. 256.)

58056. (No. 258.)

58057. (No. 260.)

58058. (No. 261.)

58059. (No. 263. Duenas.)

58060. (No. 266. Ameyugo.)

58061. (No. 268. Villacastin.)

58062. (No. 278. Uzguiano.) Winter barley.

58063. (No. 279. Uzguiano.) Spring barley.

58064. (No. 281. Villar de Arnero.)

58065. (No. 282. Villar de Arnero.)

58066. (No. 285, Ribofarda.)

58967. (No. 287. Alagon.) Secured from Mariano Argur.

58068. (No. 288.)

58069. LATHYRUS SATIVUS L. Fabaceæ.

Bitter vetch.
(No. 271. Monasterio de Bodilla.)

58070. MEDICAGO SATIVA L. Fabaceæ. Alfalfa.

(No. 275. Monasterio de Bodilla.)

58071. SECALE CEREALE L. Poaceæ. Rye.

(No. 274. Monasterio de Bodilla.)

58072. TRIGONELLA FOENUM-GRAECUM L. Fabaceæ. Fenugreek.

(No. 273. Monasterio de Bodilla.)

58073. Triticum aestivum L. (T. vulgare Vill.) Poaceæ.

Common wheat.

From Montgomery, Punjab, India. Seeds collected by H. V. Harlan, Bureau of Plant Industry. Received October 13, 1923.

(No. 239. July 19, 1923.) Wheat as it comes to the assembling warehouses from the farms about Montgomery, India. (Harlan.)

58074 to 58085. TRITICUM AESTIVUM L. (T. vulgare Vill.) Poaceæ. Common wheat.

From Spain. Seeds collected by H. V. Harlan, Bureau of Plant Industry. Received October 13, 1923. Notes by Doctor Harlan.

(September, 1923.) Purchased in agricultural villages from growers.

58074. (No. 247. September 20, 1923.) Purchased in the village of Parla.

58075. (No. 251. Arevalo.)

58076. (No. 253. Arevalo.)

58074 to 58085—Continued.

58077. (No. 259.)

58078. (No. 262.)

58079, (No. 264, Duenas.)

58080. (No. 267. Ameyugo.)

58081. (No. 270. Villacostin.)

58082. (No. 272. Monasterio de Bodilla.)

58083. (No. 277. Uzguiano.)

58084. (No. 283. Villar de Arnero.)

58085. (No. 286. Alagon.)

58086. CICER ARIETINUM L. Faba-Chick-pea. ceæ.

From Gizeh, Egypt. Seeds purchased from the botanical section, Ministry of Agriculture. Received October 31, 1923.

Seeds of the small-seeded chick-pea, introduced for forage-crop specialists.

Malus sp. Malaceæ. Apple.

From Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received October 31, 1923.

(Likiang. August, 1923.) A tree about 30 feet high growing wild in the Likiang district. The small, attractive, uniformly red, oblong, cherry-like fruits have yellowish white acid flesh and are sold in the markets of Likiang. (Rock.)

58088 to **58090**. Berberis spp. Berberidaceæ. Barberry.

From Rochester, N. Y. Cuttings presented by W. L. G. Edson, in charge of the herbarium, Highland Park. Received November 9, 1923.

Introduced for pathologists studying leaf rusts.

58088. BERBERIS ACUMINATA Franch.

An evergreen shrub of open spreading habit An evergreen shrub of open spreading habit with bright-red young growth and stout 3-parted spines 3 to 6 inches long. The brownish yellow flowers, three-quarters of an inch broad, are in clusters of four to eight in the axils of the previous year's shoots. The oblong black fruits are half an inch long. Native to central China. (Adapted from Bean, Trees and Shrubs Hardy in the British Isles, vol. 1, p. 234.)

58089. BERBERIS CONCINNA Hook. f.

A low, bushy barberry which was discovered in the mountains of Sikkim, India, at an altitude of about 12,000 feet. It is of compact habit, with obovate leaves shining green above and white beneath. The deep-yellow flowers are about half an inch across, and the red oblong berries are a little more than half an inch long. (Adapted from Bean, Trees and Strubs Hardy in the British Isles, vol. 1, p. 238.)

58090. BERBERIS CRATAEGINA DC.

A deciduous shrub 5 feet high with 6 to 10 flowered racemes 1 to 2 inches long and bluish black fruits. Native to Asia Minor.

For previous introduction see S. P. I. No. 53089. 58091 and 58092.

From

rom Manila, Philippine Islands. Seeds pre-sented by P. J. Wester, agricultural adviser, Bureau of Agriculture. Received November 9, 1923. Notes by Mr. Wester.

58091. Capsicum annuum L. Solanaceæ. Red pepper.

A long, slender, very hot pepper found in Siasi, Sulu Archipelago. It is said to be grown on a commercial scale near Singapore. It is very productive and might be useful for chili growers in the United States.

58091 and 58092—Continued.

58092. FLACOURTIA EUPHLEBIA Merr. Flacour. tiaceæ.

Langon. A small tree, native to these islands, bearing in profusion fruits very similar in appearance and flavor to those of Flacourtia cataphracta. They can probably also be used for jelly making.

For previous introduction see S. P. I. No. 54691.

58093 to 58126. Berberis spp. Berberidaceæ. Barberry.

From the Arnold Arboretum, Jamaica Plain, Mass Cuttings collected by H. C. Skeels, Bureau of Plant Industry. Received October 31, 1923.

A collection of barberries introduced for pathologists studying leaf rusts.

58093. Berberis aemulans C. Schneid.

A purple-twigged shrub 3 or 4 feet high, with oval-oblong leaves, yellow flowers, and yellowish berries. Native to western Szechwan, China. (Adapted from Sargent, Plantae Wilsonianae, vol. 3, p. 434.)

58094. Berberis aggregata C. Schneid.

A Chinese shrub 3 to 5 feet high which has yellowish brown spines, small oblong leaves, yellow flowers in dense racemes, and salmon-red fruits. (Skeels.)

For previous introduction see S. P. I. No. 54061.

58095, Berberis aggregata prattii C. Schneid

A hardy shrub 6 to 10 feet in height, with slender 3-parted spines, oval leaves, narrow panicles of yellow flowers, and egg-shaped salmon red fruits about one-fourth of an inch in length It is a native of western China and grows very freely under cultivation at Kew, England (Adapted from Curtis's Botanical Magazine, pl

For previous introduction see S. P. I. No. 55071

58096. BERBERIS AGGREGATA RECURVATA C Schneid.

A variety differing from the type only in having the fruiting pedicels recurved. (Adapted from Sargent, Plantae Wilsonianae, vol. 3, p. 443.)

58097. Berberis brachypoda Maxim

A shrub from western China, 4 to 7 feet high with ovate, serrate leaves, long slender panicles of yellow flowers, and scarlet fruits often half ar inch in length. (Skeels.)

For previous introduction see S. P. I. No. 54064 58098 and 58099. BERBERIS BUXIFOLIA Lam

58098. A barberry 1 to 3 feet high, with wedge shaped leaves, solitary orange-yellow flower on long stems, and blackish purple berries Native to Chile.

58099. Var. nana. A variety which forms compact tufts about a foot high.

58100. Berberis circumserrata C. Schneid.

A bush from central China, up to 7 feet high with roundish oval leaves having very numerou slender spine-tipped serrations. The spines ar 3-parted, about half an inch long, and the bright 3-parted, about half an inch long, and the bright yellow flowers, half an inch wide, are solitary o in twos or threes on a common stalk. The scarle fruits are oblong, slightly bloomy, and nearly half an inch long. In autumn the leaves turn scarlet. (Adapted from Sargent, Plantae Wissonianae, vol. 1, pt. 3, p. 354, and from Rehder, is Bailey, Standard Cyclopedia of Horticulture, vol. 1 pt. 491. p. 491.)

For previous introduction see S. P. I. No. 43819 58101. Berberis concinna Hook. f.

For previous introduction and description se

58093 to 58126-Continued.

58102. Berberis dasystachya Maxim.

A bush up to 5 feet in height, native to Hupeh and Shensi, western China. The flowers are yellow and the fruits coral red. (Adapted from Sargent, Plantae Wilsonianae, vol. 3, p. 442.)

58103. BERBERIS DIELSIANA Fedde.

A spreading, loosely branched Chinese shrub often 10 feet high, with elliptic leaves that are whitish beneath. The beauty of the red fruits is accentuated by the bronze color of the leaves in the fall. (Skeels.)

For previous introduction see S. P. I. No. 54066-58104. Berberis francisci-ferdinandi C-Schneid.

A shrub 6 to 10 feet in height, with deciduous, papery, dull-green leaves, yellow flowers, and ovoid searlet berries. Native to western China. (Adapted from Sargent, Plantae Wilsonianae, vol. 1, p. 368.)

58105. BERBERIS GILGIANA Fedde.

A native of central China, this ashy barked shrub has somewhat coriaceous lanceolate leaves and dense racemes of yellow flowers. (Skeels.)

For previous introduction see S. P. I. No. 54067 58106. Berberis henryana C. Schneid.

A Chinese shrub resembling the common barberry (Berberis vulgaris) but having purplish or brown branches. It is about 8 feet high with membranous, elliptical leaves, pale beneath, and racemes of 10 to 20 yellow flowers, followed by red fruits. (Skeels.)

For previous introduction see S. P. I. No, 54068. 58107. BERBERIS INTEGERRIMA Bunge.

A Siberian barberry which forms a shrub up to 6 feet high, with grayish green leaves, dense racemes of small flowers, and black fruits. (Adapted from Schneider, Illustriertes Handbuch der Laubholzkunde, vol. 1, p. 308.)

58108. BERBERIS JULIANAE C. Schneid.

A shrubby barberry up to 7 feet high, native to western China. It has thick 3-cleft spines about an inch and a half long, narrowly oval leathery leaves, and small yellow flowers. (Adapted from Sargent, Plantae Wilsonianae, pt. 1, p. 361, 1913.)

For previous introduction see S. P. I. No. 43820 58109. Bereeris koreana Palibin.

A Korean shrub, often 6 feet high, with obovate leaves 2 to 3 inches long, dense lax racemes of yellow flowers, and round scarlet fruits. (Skeels.)

For previous introduction see S. P. I. No. 54069.

58110. X BERBERIS NOTABILIS C. Schneid.

A large handsome shrub up to 8 feet in height with papery blue-green leaves, rather dense clusters of yellow flowers, and purple fruits. Probably a hybrid of Berberis htteropoda. (Adapted from Journal of the Arnold Arbortum, vol. 4, p. 203.)

58111. X Berberis ottawensis C. Schneid.

A spreading-creet shrub 3 or 4 feet high, with very variable foliage, long-stalked yellow flowers, and red berries. A hybrid, one of whose parents is Berberis rulgaris f. atropurpurca. (Adapted from Journal of the Arnold Arboretum, vol. 4, p. 221.)

58112 and 58113. BERBERIS POIRETI C. Schneid.

58112. A shrub up to 5 feet in height, with slender, arching branches and deep blood-red berries. Native to northern China.

For previous introduction see S. P. I. No. 50404.

58093 to 58126—Continued.

58113. Forma weichangensis. A form of the above species from Weichang, Chihli, China; it differs slightly from the type in the size of the bracts and in spine characters.

For previous introduction see S. P. I. No. 55073.

58114. Berberis Polyantha Hemsí.

A Chinese shrub, 6 to 9 feet high, with deep-yellow flowers and salmon-red fruits. Native to western Szechwan. (Adapted from Sargent, Plantae Wilsonianae, vol. 1, p. 876.)

For previous introduction see S. P. I. No. 53638. 58115. Berberis rehderiana C. Schneid.

This barberry is supposed to be a native of Japan; it is a shrub with weak spines, oblanceolate or ovate-oblong leaves about 1 inch in length, racemes of small yellow flowers, and yellowish red globose fruits. (Adapted from Bulletin V'Herbier Boissier, ser. 2, vol. 5, p. 659.)

For previous introduction see S. P. I. No. 49063.

58116. Berberis sieboldh Miquel.

A Japanese shrub about 3 feet high, with reddish brown branches and obovate leaves 1 to 2 inches long, which turn deep red in the fall. The yellow flowers, in small racemes, are followed by light-red fruits one-fourth of an inch long. (Skets.)

For previous introduction see S. P. I. No. 54072.

58117. Berberis silva-taroucana C. Schneid.

A shrub 3 to 6 feet high, native to thickets in western China, with papery, narrowly oblong leaves, sessile racemes of yellow flowers, and roundish scarlet berries. (Adapted from Sargent, Plantae Wilsonianae, vol. 1, p. 370.)

58118. BERBERIS SINENSIS Desf.

A slender-branched shrub 4 to 6 feet high, with ovoid purplish berries. Native to the Caucasus. (*Rehder.*)

58119 X BERBERIS STENOPHYLLA Lindl.

A slender shrub 1 to 3 feet in height, with narrow, spiny pointed, dark-green leaves and nodding umbels of yellow flowers. A hybrid of garden origin. (Rehder.)

58120. BERBERIS SUBCAULIALATA C. Schneid.

A thickly branched shrub from Tibet, up to 4½ feet high, with spines up to an inch in length, thick, lance-shaped leaves about an inch long and globular reddish yellow fruits one-fourth of an inch in diameter. (Adapted from Schneider, Illustriertes Handbuch der Laubholzkunde, vol. 2, p. 919.)

For previous introduction see S. P. I. No. 43824.

58121. Berberis thunbergii maximowiczii Regel.

A Japanese barberry which is larger than the ordinary form and has more arching branches, while the leaves are green beneath. It has the same autumn color of the leaves as the common form and has larger flowers and fruits. (Skeels.)

For previous introduction see S. P. I. No. 54073.

58122. Berberis thunbergii minor Rehder.

A variety of the well-known species which forms a very low, dense shrub up to 2 feet in height.

58123. Berberis tischleri C. Schneid.

A shrub from western China, 7 to 14 feet high, with spines in threes, papery spine-tipped leaves up to 2 inches in length, and yellow flowers in dense racemes. The somewhat pruinose eggshaped red fruits appear in October. (Adapted from Sargent, Plantae Wilsonianae, pt. 1, p. 355, 1913.)

For previous introduction see S. P. I. No. 43825.

58093 to 58126—Continued.

58124. Berberis triacanthophora Fedde.

An evergreen shrub, up to 5 feet high, with very narrow leaves, which are sometimes spiny toothed, and black ovoid berries. Native to central China.

58125. BERBERIS VERNAE C. Schneid.

A low shrub, native to Kansu, China, with spatulate leaves in small fascicles and small yellow flowers followed by round red berries one-fourth of an inch in diameter. (Adapted from Sargent, Plantae Wilsonianae, vol. 1, p. 372.)

For previous introduction see S. P. I. No. 54074.

58126. BERBERIS VERRUCULOSA Hemsl. and Wils.

This attractive Chinese barberry is found as an evergreen shrub in western Szechwan, where it becomes 3 or 4 feet in height. The yellow flowers and ovoid purplish blue fruits are borne among the small, very spiny leaves. (Adapted from Curtis's Botanical Magazine, vol. 138, pl. 8454.)

For previous introduction see S. P. I. No. 49129.

58127. Eucalyptus delegatensis R. T. Baker.

From Hobart, Tasmania. Seeds presented by L. A. Evans, Secretary of Agriculture, Agricultural and Stock Department. Received December 3, 1923.

These seeds were produced at Tyenna, which has an altitude of over 700 feet and an annual rainfall of over 40 inches. (Evans.)

"The gum-topped stringybark is an erect tree, often assuming the largest dimensions. The branches are usually short and ascending, and the bark is thin and fibrous." (L. Rodway, Tasmanian Eucalypts, p. 15.)

58128. Trichilia EMETICA Vahl. Meliaceæ.

From Uganda, British East Africa. Seeds presented by Frank H. Rogers, through H. L. Shantz, Bureau of Plant Industry. Received November 9, 1923.

November 9, 1923.

These seeds are known in Mozambique under the native names Umkuhlu, Marba, Marwa-Maawa, Guande, Mafoureira, Mafura, or Mafurrera, where they have long been known as the source of Mafura tallow, a vegetable fat used by the natives for greasing the skin. The fat consists of about 55 per cent oleic acid and 45 per cent palmitic acid and has been used in the manufacture of soap. (W. W. Stockberger, Bureau of Plant Industry.)

For previous introduction see S. P. I. No. 52811.

58129. Holcus sorghum L. (Sorghum vulgare Pers.) Poaceæ. Broomcorn.

From Assam, Jorhat, India. Seeds presented by S. K. Mitra, economic botanist to the Government of Assam. Received November 15, 1923.

This broomcorn was picked out as a mutant in my standard broomcorn plat. I received the seed from the United States Department of Agriculture in 1921. (Mitra.)

58130. PENTAGONIA PHYSALODES (L.) Hiern. (Nicandra physaloides Gaertn.) Solanaceæ.

From Ures, Sonora, Mexico. Seeds presented by Roberto A. Morales, forest inspector. Received November 15, 1923.

A blue-flowered solanaceous plant with the fruit inclosed in the husk, as in Physalis. The campanulate flowers, an inch or more in diameter, are light blue with a lighter throat: they are produced singly in the axils of the leaves.

For previous introduction see S. P. I. No. 48922.

58131 to 58135.

From Glasnevin, Dublin, Ireland. Seeds presented by the director, Royal Botanic Gardens. Received November 8, 1923.

58131 to 58133. BERBERIS spp. Berberidaceæ. Barberry.

58131. BERBERIS AETNENSIS Presl.

A low, dense, deciduous shrub with numerous spines, from Sicily.

58132. BERBERIS ALKSUTHIENSIS Hort.

[Place of publication of name not yet found.]

58133. BERBERIS THIBETICA C. Schneid.

A decidous shrub 3 to 4 feet tall, with purplish glaucous branches, entire leaves which are whitish beneath, and yellow flowers, followed by red berries. Native to China. (Adapted from Schneider, Handbuch der Laubholzkunde, vol. 2, p. 1920.)

For previous introduction see S. P. I. No. 53642.

58134. COTONEASTER HARROVIANA Wilson. Malacem.

An evergreen shrub with a loose, spreading habit, about 6 feet in height, with shining, darkgreen, bristle-tipped leaves, dense corymbs of white flowers, and red fruits. Native to Yunnan, China. (Adapted from Bean, Trees and Shrubs Hardy in the British Isles, rol. 1, p. 410.)

58135. Hemerocallis forrestii Diels. Liliaceæ.

A very handsome plant about 2 feet high, with a thick rootstalk, narrow lanceolate leaves, and deep golden orange tubular flowers, 2 to 3 inches long, borne in many-flowered spikes. It flowers only in very early spring and is suited only for pure limestone soil. (J. F. Rock, note under S. P. I. No. 55933.)

58136 to 58152.

From Kew, England. Seeds presented by Dr. A. W. Hill, director, Royal Botanic Gardens. Received November 10, 1923.

58136 to 58143. Berberis spp. Berberidaceæ.
Barberry.

58136. Berberis AGGREGATA PRATTII C Schneid.

For previous introduction and description see S. P. I. No. 58095.

58137. BERBERIS BEANIANA C. Schneid.

A shrub with vigorous shoots, yellow spines, small yellow flowers, and purple plum-shaped fruits. (Adapted from Sargent, Plantae Wilsonianae, vol. 3, p. 439.)

For previous introduction see S. P. I. No. 49925.

58138. BERBERIS GAGNEPAINI C. Schneid.

An evergreen shrub 3 to 6 feet high, with leathery leaves, spiny on the margins, and delicate yellow flowers on red pedicels. The ellipsoid berries are glaucous purple. Native to China.

For previous introduction see S. P. I. No. 53634.

58139. BERBERIS LYCIUM Royle.

A shrub native to the western Himalayas at altitudes of 3,000 to 9,000 feet, with narrow bright-green leaves and pale-yellow flowers, followed by ovoid violet berries. (Adapted from Collett, Flora Simlensis, p. 22.)

For previous introduction see S. P. I. No. 53636.

58136 to 58152—Continued.

58140. Berberis Polyantha Hemsl.

A deciduous shrub 6 to 10 feet high, with simple or 3-pronged thorns, obovate leaves, mostly rounded at the apex, and yellow flowers, which are produced during June and July in drooping panicles. The berries are red. Native to China. (Adapted from Bean, Trees and Shrubs Hardy in the British Isles, vol. 1, p. 246.)

For previous introduction see S. P. I. No. 53638.

58141. BERBERIS SOULIEANA C. Schneid.

An evergreen shrub 3 to 6 feet high, with leathery, lanceolate, spiny serrate leaves 2 to 4 inches long and brownish yellow flowers in clusters of 2 to 15. The black ellipsoid berries are about five-eighths of an inch long. Native to China. (Adapted from Curtis's Botanical Magazine, vol. 134, pl. 8185, under Berberis accuminate Stapf.)

For previous introduction see S. P. I. No. 49930.

58142. Berberis stapfiana C. Schneid.

A partly evergreen shrub, 5 to 6 feet high with spreading arching stems, pale-yellow flowers, and carmine-red berries. Native to western China.

For previous introduction see S. P. I. No. 53640.

58143. BERBERIS SUBCAULIALATA C. Schneid.

For previous introduction and description see S. P. I. No. 58120.

58144. CORNUS BRETSCHNEIDERI J. Henry. Cornaceæ. Dogwood.

A shrub up to 12 feet in height, with green or purplish branches, oval, hairy leaves, and dense clusters of bluish black berries.

For previous introduction see S. P. I. No. 42188.

58145 to 58151. Cotoneaster spp. Malaceæ.

58145. COTONEASTER AFFINIS OBTUSA (Wall.) C. Schneid.

An upright slender-branched shrub, with bright-green leaves and globose dark-brown fruits. Native to the Himalayas. (Adapted from Schneider, Illustriertes Handbuch der Laubholzkunde, vol. 1, p. 757.)

58146. COTONEASTER HARROVIANA Wilson.

For previous introduction and description see S. P. I. No. 58134.

58147. COTONEASTER HEBEPHYLLA Diels.

A very ornamental deciduous shrub, 10 to 18 feet in height. It has long, rambling branches, white flowers, and dark-carmine fruits. (J. F. Rock, note under S. P. 1. No. 55873.)

58148. COTONEASTER HUPEHENSIS Rehd. and Wils.

A strong-growing, shrubby, black-fruited species, with graceful spreading branches, attractive white flowers, and crimson globose fruits. (Arnold Arboretum, Bulletin of Popular Information, No. 19.)

For previous introduction see S. P. I. No. 44079

58149. COTONEASTER LINDLEY! Steud.

A large shrub or small tree, with semideciduous dark-green leaves, corymbs of white flowers, and bluish black fruits. Native to the northwestern Himalayas. (Adapted from Schneider, Handbuch der Laubholzkunde, vol. 1, p. 757.)

For previous introduction see S. P. I. No. 53683.

87090-26-2

58136 to 58152—Continued.

58150. COTONEASTER MELANOCARPA LAXI-FLORA (Jacq.) C. Schneid.

A spreading shrub which becomes about 12 feet high, with oval dark-green leaves, grayish white beneath, gracefully pendulous clusters of pinkish white flowers, and black globose fruits. This Siberian species is one of the most attractive of the black-fruited cotoneasters. (Adapted from Bean, Trees and Shrubs Hardy in the British Isles, vol. 1, p. 412.)

For previous introduction see S. P. I. No. 53685

58151. COTONEASTER RACEMIFLORA (Desf.) Koch.

A low shrub from northern Africa and western Asia, with roundish leaves, slightly hairy beneath, and short-stalked cymes of white flowers, followed by red fruits. Received as Coton-easter fontanesi, for which C. racemiflora is the earlier name.

For previous introduction see S. P. I. No. 53690.

58152. Hydrangea bretschneideri Dipp. Hydrangeaceæ.

A stout bushy shrub 8 or 10 feet high, with dull-green slender-pointed leaves and flattened corymbs, 4 or 5 inches wide, of white flowers, which become rosy. This hardy hydrangea was first discovered in the mountains near Peking, China, and thrives best in a sunny position in good soil. (Adapted from Bean, Trees and Shrubs Hardy in the British Isles, vol. 1, p. 624.)

For previous introduction see S. P. I. No. 42189.

58153 to 58357.

From Siberia. Seeds presented by Prof. T. D. A. Cockerell, University of Colorado. Received November 2, 1923.

58153. ACTINIDIA KOLOMIKTA (Maxim.) Rupr. Dilleniaceæ.

Razdolnoe. From Nikolsk Ussurijskij.

58154. ALLIUM CEPA L. Liliaceæ. Onion

Sweet onion. From Okeanskaia, Olshin. 58155 to 58189. Avena sativa L. Poaceæ. Oats.

58155. Blagodatnoe. From Nikolsk Ussuriiskii.

58156. Bogatirka. From Nikolsk Ussuriiskii.

58157. Chernigovka. From Spassk.

58158. Chernishevka. From Spassk.

58159. Chorol. From Nikolsk Ussuriiskii.

58160, Grodekovo. From Nikolsk Ussuriiskii.

58161. Innokentievka. From Spassk.

58162. Ivanovka. From Nikolsk Ussuriiskii.

58163. Kabarga. From Spassk.

58164. Krasnoe. From Posetski.

58165. Kremovo. From Nikolsk Ussuriiskii.

58166, Kuchuki. From Nikolsk Ussuriiskii.

58167, Margaritovo. From Olshin.

58168. Nizhni Janchich. From Posetski.

58169 to 58177. From Nikolsk Ussuriiskii.

58169. Novo-Belmanovka.

58170. Novojatkovo.

58171. Novo-Kashalinsk.

58172. Novo-Nikolaevka.

58173. Novo- Troitzkoe.

58174. Osinovka.

58153 to 58357—Continued.

58175. Pavlovka.

58176. Platonovo Alekandrovskoe.

58177. Popovka.

58178. Sikilsk. From Posetski.

58179 to 58183. From Nikolsk Ussuriiskii.

58179. Sofie-Alekseevskoe.

58180. Strugovka.

58181. Tarasovka.

58192, Vladimirovskoe.

58183. Vozdvizhenka.

58184 to 58186. From the city of Spassk.

58184. Beliak.

58185. Grivan.

58186. A Swedish variety.

58187. From Goschoz, Spassk.

58188. From Goschoz, Nikolsk Ussuriiskii.

58189. From Nikolsk Ussuriiskii.

58190 to 58197. From Okeanskaia, Olshin.

58190 and 58191. Beta vulgaris L. Chenopodiaceæ. Beet.

58190. An Egyptian variety.

58191. Korshovaia.

58192. Brassica oleracea capitata L. Brassicaceæ. Cabbage.

Braunschweig cabbage.

58193 and 58194. Cucumis sativus L. Cucurbitaceæ. Cucumber.

58193. Seeds of mixed varieties: Nejinski, Muromski, and Akselski.

58194 Nejinski.

58195. CUCURBITA MAXIMA Duchesne. Cucurbitaceæ. Squash.

A Canadian variety.

58196. CUCURBITA PEPO L. Cucurbitaceæ.

Gourd.

58197. DAUCUS CAROTA L. Apiaceæ. Carrot. Nantski.

58198 to 58220. FAGOPYRUM VULGARE Hill. (F. esculentum Moench.) Polygonaceæ.

Buckwheat.

58198. Chernigovka. From Spassk.

58199. Chernishevka. From Nikolsk Ussuriiskii.

58200. Duchovskoe. From Nikolsk Ussuriiskii.

58201. Granaturka. From Nikolsk Ussuriiskii.

58202. Innokentievka. From Spassk.

58203. Kabarga. From Spassk.

58204. Konstantinovka. From Nikolsk Ussuriiskii.

58205. Kremovo from Nikolsk Ussuriiskii.

58206. Krasnoe. From Posetski.

58207 to 58218. From Nikolsk Ussuriiskii.

58207. Michailovka.

58208. Nesterovskoe.

58209. Novo-Belmanovka.

58210. Novo-Devitza.

58153 to 58357—Continued.

58211. Novopsatkovo.

58212. Novo-Troitzkoe.

58213. Osipovka.

58214. Poporka.

58215. Pushkino.

58216. Strugovka.

58217. Tarasovka.

58218. Vozdvizhenko.

58219. From Goschoz, Spassk.

58220. From Goschoz, Nikolsk Ussuriiskii.

58221 to 58223. HELIANTHUS ANNUUS L. Aster-

58221. Ivanovka. From Nikolsk Ussuriiskii.

58222. Sofie-Alekseevskoe. From Nikolsk Ussuriiskii.

58223. From Goschoz, Spassk.

58224 to 58233. Hordeum Vulgare Pallidum Seringe. Poaceæ. Six-rowed barley.

58224 to 58228. From Nikolsk Ussuriiskii.

58224. Chernishevka.

58225. Furmanovo.

58226. Granaturka.

58227. Ivanovka.

 ${\bf 58228.}\ \ Konstantinov ka.$

58229. Krasnoe. From Posetski.

58230 to 58233. From Nikolsk Ussuriiskii.

58230, Krasulovka.

58231. Kremovo.

58232. Novo-Belmanovka.

58233. Vozdvizhenko.

58234 to 58248. Linum usitatissimum L. Linaceæ. Flax.

58234. Annenka. From Spassk.

58235. Chernigovka. From Spassk.

58236 to 58243. From Nikolsk Ussuriiskii.

58236. Chorol.

58237. Kremovo.

58238. Kupuko.

58239. Nesterovskoe.

58240. Nikolo-Lvovskoe.

58241. Novo-Belmanovka.

58242. Novojatkovo.

58243. Popovka.

58244. Promislovka. From Olshin.

58245 to 58248. From Nikolsk Ussuriiskii.

58245. Sofie-Alekseevskoe.

58246. Strugovka.

58247. Tarasovka.

58248, Vozdvizhenka.

58249 and 58250. Lycopersicon esculentum Mill. Solanaceæ. Tomato.

From Okeanskaia, Olship.

58249. King Humbert.

58250. A large yellow tomato.

58153 to 58357—Continued.

58251 to 58272. PANICUM MILIACEUM L. Poaceæ. Proso.

58251 to 58255. From Nikolsk Ussuriiskii.

58251. Bogatirka.

58252. Chernishovka.

58253. Furmanovo.

58254. Granaturka.

58255. Ivanovka.

58256. Kabarga. From Spassk.

58257 to 58262. From Nikolsk Ussuriiskii.

58257. Kremovo.

58258. Michailovka.

58259 Nesteronskoe.

58260. Novo-Devitza,

58261. Osinovka.

58262. Platonovo Aleksandrovskoe.

53263. Promislovka. From Olshin.

58264 to 58267. From Nikolsk Ussuriiskii.

58264. Sofie-Alekseevskoe.

58265. Tarasovka.

58266. Vladimirovskoe.

58267. Vozdvizhenko.

58268. Zenkovo. From Spassk.

58269. Black. From Spassk.

58270. Grits. From Goschoz, Schmakovski Monastery, Spassk.

58271. Red. From Goschoz, Nikolsk Ussuriiskii.

58272. From Novopsatkovo, Nikolsk Ussuriiskii.

58273. Perilla frutescens (L.) Britton. ocymoides L.) Menthaceæ. Pe Perilla.

Sudza. From Nikolsk Ussuriiskii.

58274 to 58277. Phaseolus spp. Fabaceæ.

58274. Phaseolus angularis (Willd.) W. F. Adzuki bean. Wight.

Krasnoe. From Posetski.

58275. Phaseolus coccineus L. Scarlet Runner bean.

Decorative bean. From Station II, Rechka, Ussuriiskii Railroad.

58276 and 58277. Phaseolus vulgaris L. Common bean.

58276. Furmanovo. From Nikolsk Ussuriiskii.

58277. Asparagus bean. From Okeanskaia, Olshin.

58278 and 58279. PHLEUM PRATENSE L. Poaceæ.

58278. Uspenka. From Spassk.

58279. From the city of Spassk.

58280 to 58283. PISUM SATIVUM L. Fabaceæ.

58280. Khvalinka. From Spassk.

58281. Green peas. From Station II, Rechka, Ussuriiskii Railroad.

58282. Canning peas. From Station II, Rech-ka, Ussuriiskii Railroad.

58283. From Goschoz, Spassk.

58153 to 58357—Continued.

58284. RAPHANUS SATIVUS L. Brassicaceæ. Radish.

An oval-elongated, greenish, Chinese variety of radish. From Okeanskaia, Olshin.

58285 to 58311. SECALE CEREALE L. Poaceæ.
Rye.

58285 to 58288. Winter rve.

58285, Blagodatnoe, From Nikolsk Ussuriiskii.

58286. Chernigovka. From Nikolsk Ussuriiskii

58287. Chorol. From Nikolsk Ussuriiskii.

53288. Delovka. From Spassk.

58289 to 58303. From Nikolsk Ussuriiskii.

58289. Duchovskoe. Spring rye.

58290. Ennokentievka. Winter rye.

58291 to 58296. Spring rye.

58291. Jakonovka.

58292. Kremovo.

58293. Kuguni.

58294. Michailovka.

58295. Nesterovskoe.

58296. Nikolo-Lvovskoe.

58297. Novaia-Devitza. Winter rye.

58298. Novojatkovo. Spring rye.

58299. Novo-Kalachinek. Spring rye.

58300. Novo-Troitzkoe. Winter rve.

58301. Platonovo Aleksandrovskoe. Winterrye.

58302. Popovka. Spring rye.

58303. Popovka. Winter rve.

58304. Pomislovka. From Olshinsk.

58305. Sofie-Alekseevskoe. From Nikolsk Ussuriiskii.

58306. Strugovka. From Nikolsk Ussuriiskii.

58307. Tarasovka. From Nikolsk Ussuriiskii.

58308. Vozdvizhenka. From Nikolsk Ussuriiskii.

58309. Winter rve. From Schmakovski Monastery.

58310. From Goschoz, Nikolsk Ussuriiskii.

58311. From the city of Spassk.

58312 to 58326. Soja Max (L.) Piper. (Glycine hispida Maxim.) Fabaceæ. Soy bean.

58312. Chernishevka. From Nikolsk Ussuriiskii.

58313. Chorol. (Chinese "White brow.")

58314. Fatashi. From Posetsk.

58315. Grodekovo. From Nikolsk Ussuriiskii.

58316. Ivanovka. From Nikolsk Ussuriiskii.

58317. Kazakevitchevo. From Nikolsk Ussuriiskii.

58318. Konstantinovka. From Spassk.

58319. Krasnoe. From Posetski,

58320. Krenlovka. From Nikolsk Ussuriiskii.

58321. Nagornaia. From Posetski.

58322. Novaia Derevnia. From Posetski.

58323. Sofie-Alekseevskoe. From Nikolsk Ussuriiskii.

58324. Zenkovka. From Spassk.

58325. From Goschoz, Spassk.

58153 to 58357—Continued.

58326. From the city of Spassk.

58327 to 58342. TRITICUM AESTIVUM L. (T. vulgare Vill.) Poaceæ. Common wheat.

58327. Brovki, From Olshin.

58328. Chernigovka. From Spassk.

58329. Chernishevka. From Spassk.

58330. Chorol. From Nikolsk Ussurijskii.

58331. Duchovskoe. From Nikolsk Ussuriiskii.

58332. Khvalinka. From Spassk.

58333. Margaritovo. From Olshin.

58334. Moleim Mis. From Olshin.

58335. Petrovka. From Olshin.

58336. Promislovka. From Olshin.

58337. Sofie-Alekseevskoe.

58338. Tumanova.

58339. Zenkovka. From Spassk.

58340. American beardless. From the city of Spassk.

58341. From Goschoz, Spassk.

58342. Origin not given.

58343 to 58357. ZEA MAYS L. Poaceæ. Corn.

58343. Chorol. From Nikolsk Ussurijskii.

58344. Fatashi. From Posetski.

58345 to 58350. From Nikolsk Ussuriiskii.

58345. Golenki.

58346. Granaturka.

58347. Ivanovka.

58348. Kazakevitchevo.

58349. Konstantinovka.

58350. Krenlovka.

58351. Nagornaia. From Posetski.

58352, Uspenka. From Spassk.

58353. Table maize. From Okeanskaia, Olshin.

58354. (Turkish.) From the city of Spassk.

58355. From the city of Spassk.

58356. From Nikolsk Ussuriiskii.

58357. From Razdolvinskaia Volost, Nikolsk Ussuriiskii.

58358. Jatropha sp. Euphorbiaceæ. Chilte.

From San Jacinto, Mexico. Seeds presented by Samuel Torres Elorduy, Chief, Department of Agriculture. Received December 12, 1923.

Introduced for testing as a possible source of rubber.

58359 to 58361.

From Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received December 15, 1923. Notes by Mr. Rock.

58359. Anemone sp. Ranunculaceæ.

(October 8, 1923.) A plant about 3 feet high, which grows in moist alpine meadows at the edge of fir forests on the Litiping-Yangtze-Mekong watershed at an altitude of about 11,000 feet. The large dark-green glossy leaves form globose cushions, and the umbels of white flowers are on stalks 3 feet or more in length.

58359 to 58361--Continued.

58360. CEPHALOTAXUS SD. Taxaceæ.

(No. 10891. October 7, 1923.) A small coniferous tree, 20 to 25 feet tall, growing in dense clumps above Lutien on the eastern slope of the Yangtze-Mekong watershed at an altitude of 9,600 feet. The rather long, broad needles are bluish green, and the maroon-colored fleshy fruits, the size of small plums, contain almond-shaped thinshelled stones.

58361. IRIS Sp. Iridaceæ.

Iris

(October 8, 1923.) A plant a foot to a foot and a half in height, growing in clumps in the moist alpine meadows of Litiping, north of Lutien, at an altitude of about 11,000 feet. It is very handsome, with deep indigo-blue flowers.

58362 to 58364.

From Ibarra, Ecuador. Seeds presented by J. Felix Tamayo. Received December 8, 1923.

58362. DATURA ROSEI Safford. Solanaceæ.

Huantuc. A yellow-flowered form of the common arborescent Datura which is cultivated about the huts of the Indians all through the Ecuadorian highlands. The plant sometimes grows to 15 or 18 feet; its tubular flowers are about 6 inches long, 2 inches broad at the mouth, and of a rich deep-yellow color. The plant is worthy of trial as an ornamental in protected situations throughout southern California and in southern Florida.

For previous introduction see S. P. I. No. 54049.

58363. PHASEOLUS VULGARIS L. Fabaceæ.
Common bean.

Nuya. The best variety of pole bean which we have in cultivation. (Tamayo.)

58364. ZEA MAYS L. Poaceæ. Corn.

Guandango. The best variety of corn cultivated here. The ear is large, sometimes 30 centimeters (a foot) long, with 8 to 12 rows of kernels. The cob is very slender. These seeds are not of a pure strain. (Tamayo.)

58365. Persea americana Mill. (P. gratissima Gaertn. f.) Lauraceæ.

From San Jose, Costa Rica. Seeds purchased from Otón Jimenez, through the United Fruit Co., Limon, Costa Rica. Received December 7, 1923.

Avocado.

While carrying on agricultural explorations in Costa Rica in 1920, Wilson Popenoe, in company with Mr. Jimenez, discovered a wild avocado which, in the opinion of Mr. Popenoe, may possibly be the ancestor of some of the cultivated varieties. At that time budwood and seeds were sent in under S. P. I. Nos. 50585 and 51031, respectively, under which numbers detailed notes will be found. This

which furthers actained notes win be found. In is material failed to survive, however.

The seeds now received from Mr. Jimenez are presumably of this wild type of avocado, and they will be grown for trial as stock plants.

58366. Schizocentron elegans (Schlecht.) Meisn. Melastomaceæ.

From New York, N. Y. Plants presented by Dr. N. L. Britton, director, New York Botanical Gardens, Bronx Park. Received December 28, 1923.

A very charming little creeper, native to eastern Mexico, which roots at the joints and forms a dense carpet. The leaves are small, opposite, and short stemmed, and the comparatively large purplish flowers appear at the ends of short branches. The plant deserves to be more widely cultivated and would probably grow in the open in the southern part of the United States. (Adapted from note by J. N. Rose in Addisonia, pl. 266.)

58367 and 58368.

From Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received December 28, 1923. Notes by Mr. Rock.

58867. PINUS ARMANDI Franch. Pinaceæ.
Pine.

(September 23, 1923.) This is one of the largest conifers in Yunnan. It is a tree 70 to 90 feet high, with a trunk 4 feet in diameter, which grows on well-drained, moist mountain slopes from central to northern Yunnan, at altitudes of 8,000 to 10,000 The edible seeds are sold in the markets.

58368. PRIMULA SIKKIMENSIS Hook. Primulaceæ.

(No. 8995. September, 1923.) This primrose which is 1 or 2 feet high, with the habit of Primula secundiflora, grows in moist meadows and along stream beds on the Likiang Snow Range at an altitude of 13,000 feet. The lanceolate drooping leaves are dull green on both sides, and the rich yellow flowers, which appear in June, are large and hell shaped and bell shaped.

58369. Hedyscepe canterburyana (F. Muell.) Wendl. and Drude. Phænicaceæ.' Palm.

From Sydney, New South Wales. Seeds presented by J. H. Maiden, director and government botanist, Botanic Gardens. Received November 17, 1923.

This very handsome palm is known in a wild This very anadsome palm is known in a wild state only on Lord Howe Island, over 400 miles east of Australia, where it is called the "umbrella palm." It is a tall spineless palm with a comparatively short, thick stem, from the end of which arise the dense graceful leaves, composed of long, narrow segments. In habit and foliage it resembles a Kentia, and in general its cultural requirements are the same ments are the same.

58370. Byrsonima spicata DC. Malpighiaceæ.

From Dominica, British West Indies. Seeds presented by Joseph Jones, curator, Botanic Gardens. Received November 22, 1923.

A tropical American tree 30 to 40 feet high, known in Dominica as bois tan. The narrow leaves are shining green above and rusty brown beneath, and the yellow flowers, followed by acid edible fruits of the same color, make the tree a showy ornamental. The tough, light wood is useful for general construc-tion, and the bark is a source of tannin.

58371. Zea mays L. Poaceæ.

From Bawlf, Alberta, Canada. Seeds presented by A. W. Petrick. Received November 22, 1923.

A yellow flint corn, originally grown in north-western Manitoba by the Monnonites. It is a very early variety, earlier than squaw corn, with a very short growing season. (Petrick.)

58372 and 58373.

From Cambridge, England. Seeds presented by H. Gilbert-Carter, director, The University Bo-tanic Garden. Received November 23, 1923.

58372. LYCOPERSICON ESCULENTUM Mill. Solan-Tomato. aceæ.

Var. racemigerum. The fruits of this variety. which are in racemose clusters, are edible, but too small for domestic use,

Introduced for pathologists studying tomato . diseases

58372 and 58373—Continued.

58373. MECONOPSIS CAMBRICA Viguier. Papav-

The Welsh poppy, native to the British Isles, is a very desirable garden perennial. The typical form, about a foot high, has single bright-yellow flowers. Very attractive double forms with orange-colored flowers also have been produced. (Adapted from Gardeners' Chronicle, ser. 3, vol. 52, p. 54.)

58374 and 58375.

From Likiang, Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received November 23, 1923. Notes by Mr. Rock.

MECONOPSIS INTEGRIFOLIA (Maxim.) Franch. Papaveraceæ.

(September, 1923.) This is a larger species than Meconopsis rudis and grows wild on the Likiang Snow Range in alpine meadows at altitudes of 12,000 to 14,000 feet. The handsome yellow flowers are often 4 inches across.

For previous introduction see S. P. I. No. 56326.

58375. PRIMULA SECUNDIFLORA Franch. Primulaceæ.

(No. 9838.) A primrose about a foot in height, growing in alpine meadows on the Likiang Snow Range at an altitude of about 14,000 feet. The drooping, deep reddish purple flowers, with campanulate corollas, are borne at the apex of the spike. This species is always found associated with Primula pseudosikkimensis and P. pinnatifica.

For previous introduction see S. P. I. No. 55336.

58376. Paulownia fortunei (Seem.) Hemsl. Scrophulariaceæ.

From Taihoku, Formosa, Japan. Seeds presented by R. Kanehira, director, Experimental Station of Forestry. Received December 3, 1923.

This species, although closely allied to Paulownia In species, athough closely almed to Fautownia imperialis, which is so well known as an ornamental tree in this country, has whitish, spotted flowers which are larger than those of P. imperialis. The leaves also are much longer and are covered below with a short, dense, white pubescence. (Adapted from Bulletin Dendrologique de France, 1908, p. 162.)

For previous introduction see S. P. I. No. 52268.

377. AGATI TOMENTOSA (Hook. and Arn.) Nutt. (Sesbania tomentosa Fabaceæ. Hook. and Arn.)

From Honolulu, Hawaii. Seeds presented by C. S. Judd, superintendent of forestry, Board of Commissioners of Agriculture and Forestry. Received November 26, 1923.

This plant is now almost extinct in this part of the Hawaiian Islands because the foliage is such an attractive forage for cattle and goats. The brilliant-red flowers make the plants very ornamental. From the twigs the frigate birds make their nests. (Judd.)

For previous introduction see S. P. I. No. 54516.

58378. Corylus sp. Betulaceæ.

From Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received November 26, 1923.

(No. 10760. Likiang, 1923.) Received without notes

58379. ACACIA SCORPIOIDES (L.) W. F. Wight. (A. arabica Willd.) Mimo-

From Gizeh, Egypt. Seeds presented by the director, horticultural section, Ministry of Agriculture. Received November 28, 1923.

A large proportion of the gum arabic of commerce is furnished by this tree, which is native to northern Africa and southwestern Asia. True gum arabic, however, is said to come only from another species, Acacia senegal. The pods and bark of A. scorpioides are used for tanning, and the leaves and young pods are sometimes fed to cattle. The wood is hard and durable and is used in India for making tools. (Adapted from Holland, Useful Plants of Nigeria, pt. II, p. 288.)

For previous introduction see S. P. I. No. 48063.

58380 and 58381. PHLEUM PRATENSE L. Poaceæ. Timothy.

From Malaga, Spain. Seeds presented by Luis Liró Ortiz, director, Agricultural Station, Torrox, through Donald D. Shepard, American consul. Received November 28, 1923.

Local strains introduced for cultural and comparison tests.

58380. From the Estación de Ensayo de Semillas, Madrid.

58381. From the grounds of the Agricultural Experiment Station, La Coruna.

58382. Lansium domesticum Jack. Meliaceæ. Langsat.

From Los Banos, Philippine Islands. Seeds presented by J. E. Higgins, professor of agronomy and head of the department, College of Agriculture. Received December 5, 1923.

The langsat or lanzon is reckoned one of the best fruits of the Malayan region. As far as can be ascertained there is no reason why it should not do well in the West Indies, Mexico, Central America, and on the continent of South America as far southward as Ecuador and southern Brazil.

The tree reaches 40 feet in height and has pinnate leaves expressed of five to saven elliptic leaflers.

The tree reaches 40 feet in height and has pinnate leaves composed of five to seven elliptic leaflets each 4 to 8 inches long. The fruit varies in form and character, but is generally oval or round, 1 to 2 inches in diameter, velvety and straw colored, with a thick leathery skin inclosing five segments of white, translucent, juicy aromatic flesh and one to three large seeds.

Two distinct kinds are known, one termed large.

Two distinct kinds are known, one termed langsat and the other duku, or doekoe. Choice seedling forms occur in both and should be propagated by some vegetative means.

58383. Amygdalus persica L. (*Prunus persica* Stokes.) Amygdalaceæ.

Peach.

From Yihsien, Shantung, China. Seeds presented by K. M. Gordon, South Shantung Industrial School. Received December 28, 1923.

The Chinese call this peach *Chiutao*, or "autumn peach." The fruit is small and very bitter, and the variety is used as a stock on which to graft and bud better varieties. (*Gordon*.)

58384 and 58385. Casimiroa spp. Rutaceæ.

From Duarte, Calif. Budwood presented by W. A. Spinks. Received December 5, 1923.

58384. CASIMIROA SD.

Coleman. This has been considered for a number of years the best-flavored sapote of this region. The parent tree grows in the rear of the old Coleman residence in Monrovia, Calif. Some years ago A. L. Smith, of Monrovia, propagated several

58384 and 58385-Continued.

trees from the parent tree. He has a specimen 20 feet high which bears prolifically and regularly. The fruit is attractive in shape, and the tree has sapotes on it nearly all the year. (Spinks.)

58385. CASIMIROA Sp.

Spinks. A seedling sapote growing on the grounds of W. A. Spinks at Duarte, Calif.

58386 to 58388. Phaseolus vulgaris L. Fabaceæ. Common bean.

From Georgetown, British Guiana. Seeds presented by R. D. Rands, United States Department of Agriculture. Received December 3, 1923.

Introduced for pathologists studying bean diseases.

58386. Madeira butter beans.

58387. Madeira spot beans.

58388. Trinidad beans.

58389. EREMOCHLOA OPHIUROIDES (Munro) Hack. Poaceæ. Grass.

From Canton, China. Seeds presented by Prof. G. Weidman Groff, Canton Christian College. Received November 26, 1923.

This is the second most common lawn grass in southern China and is recommended as the best lawn grass for that region. Its usual height is 3 or 4 inches, the blades are smooth and soft, and the seed stalks insignificant. The attractive deep-green color is maintained during the winter in southern China if the grass gets a good hold during the summer. Propagation is easily effected by means of runners. (Adapted from Bulletin No. 25, Canton Christian College.)

For previous introduction see S. P. I. No. 48566.

58390. Alstonia macrophylla Wall. Apocynaceæ.

From Peradeniya, Ceylon. See is presented by H. F. Macmillan, superintendent, botanic gardens. Received December 21, 1923.

A shrub or small tree, native to the East Indies and the Philippines, introduced for testing by rubber specialists. Most of the members of the family to which this species belongs contain milky latex.

58391 and 58392. Larix spp. Pinaceee. Larch.

From Dorpat, Esthonia. Seeds presented by Franz Boerner, botanic garden, University of Dorpat. Received December 21, 1923.

58391. LARIX DAHURICA TURCZ.

A larch from Manchuria and southeastern Siberia, sometimes as much as 70 feet in height. In many sections it is superior to the common European larch as a park tree. In the spring the young cones are very attractive because of their bright-pink color.

58392. LARIX SIBIRICA Ledeb.

A very tall larch, at times reaching a height of 120 feet, native to northeastern Russia and Siberia. It has a straight slender trunk and short, rather ascending branches. It is closely related to the common European larch.

58393 to 58396.

From Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received December 3, 1923. Notes by Mr. Rock.

58393 to 58396—Continued.

58393. Anemone Demissa Hook. f. and Thoms. Ranunculaceæ

(Saba. September, 1923.) A lovely alpine plant common in limestone soil on all of the mountain meadows of the Likiang Snow Range at altitudes of 11,000 to 13,000 fect and higher. The leaves are in basal rosettes, and the large white flowers are in many-flowered umbels.

Franch. 58394. CASTANOPSIS DELAVAVI Fagaceæ.

(No. 10798. September, 1923.) A semideciduous tree 50 to 70 feet tall, with a trunk 4 to 6 feet in diameter, which grows on a limestone range north of Likiang at an altitude of 8,200 feet. It is also quite common on the Yangtze north of Likiang at Tungshan, Shiku, and Hgaza. The Likiang at Tungshan, Shiku, and Hgaza. The glaucous, glabrous leaves are serrate on the upper halves. The fruits are borne in axillary spikes, with 10 to 20 in each spike, and the burs are covered with concentric bands bearing short sharp spines. The fruits are small, with a single-ovate to conical nut about half an inch long, inclosing a sweet, edible kernel. This is one of the finest and bardiest timber trees of this region finest and hardiest timber trees of this region.

58395 INCARVILLEA GRANDIFLORA Sprague. Bignoniacea.

(No. 8991. Saba. September, 1923.) A stem-less plant found in limestone soil on all of the mountain meadows of the Likiang Snow Range mountain meadows of the Likhang Show Range at altitudes of 9,500 to 12,000 feet, where it is the first to flower in early spring. The dark-green glossy leaves are lyrate and pinnately cut, and the large flowers, 2 to 3 inches across, are deep magenta purple with yellow throats.

58396. Meconopsis rudis Prain. Papaveraceæ.

(No. 9840. September, 1923.) A plant 1 or 2 feet tall which thrives in loose limestone gravel, in company with *Meconopsis integrifolia*, on the Likiang Snow Range at an altitude of about 13,000 feet.

58397. Lespedeza striata (Thunb.) Fabaceæ. Hook. and Arn.

Numbered December, 1923.

In 1919 J. B. Norton visited Japan as an agricultural explorer of the United States Department of Agriculture. Among the seeds he brought back were those of a strain of *Lespedeza striata* collected near the city of Kobe. This strain preved to be an unusually strong grower and in tests at Hartsville. S. C., has outgrown both the common lespedeza (L. striata) of the South and the newly introduced (L. strand) of the South and the newly indoubled Korean lespedeza (L. stipubicea). At Arlington Experiment Farm, Rosslyn, Va., the growth of the Kobe and of the Korean varieties has been about the same, but the former makes a finer, more leafy growth and is therefore probably the better forage

The Kobe lespedeza does not seed as early as the The Kobe lespedeza does not seed as early as the Korean and at Arlington farm has made a smaller seed crop than the latter. It will therefore probably not reproduce in the North. In habit, leaf shape, and size the Kobe strain is just like the common lespedeza, but it grows to a larger size. (A. J. Pieters, Bureau of Plant Industry.)

58398 to 58402. Primula spp. Primulaceæ.

From Yunnan, China. Seeds collected by J. F.
 Rock, National Geographic Society, Washington,
 D. C. Received December 3, 1923. Notes by

58398. PRIMULA BULLEYANA Forrest.

(No. 8988. Heshwe. September, 1923.) A very striking species 2 to 3 feet high, found only in boggy meadows at Heshwe, on the eastern slope of the Likiang Show Range, at an altitude of about 11,000 feet. The deep reddish orange flowers, brownish crimson in bud, are slightly fragrant.

58398 to 58402—Continued.

58399 PRIMULA POISSONI Franch

(September, 1923.) One of the hardiest primroses from this region; it is confined to swampy meadows or even to the gravelly beds of shallow brooks on the Likiang Snow Range at altitudes of 8,000 to 10,000 feet. The flowers, with crimsonof 8,000 to 10,000 feet. The flowers, with crimson-lake corollas and yellow throats, are in candelabralike spikes.

58400. PRIMULA PULCHELLA Franch.

(No. 8682. Saba. September, 1923.) A hand-some primrose growing in limestone soil in rather moist meadows on the eastern slopes of the Li-kiang Snow Range at an altitude of 11,000 feet. The lanceolate leaves are yellowish beneath, and the large flowers are bluish purple.

58401. PRIMULA SINOPURPUREA Balf. f.

(September, 1923.) A very ornamental species about 2 feet in height, found in moist meadows on the western slopes of the Likiang Snow Range at an altitude of 13,000 feet or more. The linear leaves are bright green above and golden yellow beneath, and the purplish red flowers are borne in dense umbels. The flowers appear in May and June and the fruits in early September.

58402. PRIMULA VINCIFLORA Franch.

(No. 8394. September, 1923.) A plant about 15 inches high which loves moist meadows and shady situations on the edges of fir and spruce forests on the eastern slopes of the Likiang Snow Range at an altitude of about 12,000 feet. The leaves are elliptical and dull green, and the large flowers, resembling those of Vinca, are a deep indigo blue.

53403 and 58404.

From Para, Brazil. Seeds presented by Godfrey Davidson. Received December 13, 1923. Notes by Mr. Davidson.

58403. Aristolochia sp. Aristolochia ceæ.

This appears to be a new species.

58404. NYMPHAEA sp. Nymphæaccæ Waterlily.

A very attractive water lily; the flowers are white, shaded with pink, and delightfully fragrant.

58405. PRIMULA SINO-DENTICULATA Balf, f. Primulaceæ.

From Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received December 7, 1923.

(No. 9617. September, 1923.) One of the earliest primroses of this vicinity, flowering in February on dry grassy slopes of the Likiang Snow Range at altitudes of 7,000 to 11,000 feet. It is likewise distributed from the Tengyueh Mountains to north of Likiang and beyond the Yangtze on Haba Shan. The flowers, in dense globose heads, are deep blue with a slight purplish tinge. (Rock.)

58406. Cucumis sp. Cucurbitaceæ.

From Manila, Philippine Islands. Seeds presented by P. J. Wester, Bureau of Agriculture. Received December 12, 1923.

Kondol-nak. I collected these seeds on a recent trip to Tanjay, island of Negros. The fruits are like miniature watermelons in shape and color, averaging 5 centimeters (2 inches) in length. The flesh is edible, though of little value, but the plant might be serviceable for plant breeders who are working to get wilt-resistant cucumbers and water-melons. The fruits remain in good condition on the vines for some weeks and so may be of orna-mental value in Florida. (Wester.)

58407. MICHELIA sp. Magnoliaceæ.

From Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received November 7, 1923.

(No. 10661. Ngulukeu. September 2, 1923.) A beautiful shrub trained to form an arbor at the Lama temple, which is at an altitude of 9,500 feet on the Likiang Snow Range. The numerous white, fragrant flowers, about the size of a silver dollar, are in the leaf axils, the leaves are leathery and dark green, and the buds are silky brown. The black seeds, inclosed in a scarlet aril, are in capsules. (Rock.)

58408 to 58412.

From Vera Cruz, Mexico. Seeds presented by Dr. C. A. Purpus. Received December 12, 1923.

58408. Annona diversifolia Safford. Annonaceæ. Ilama.

For previous introduction and description see S. P. I. No. 58030.

58409. CERATOZAMIA MEXICANA Brongn. Cycadaceæ.

A handsome cycad from southeastern Mexico, with a short, thick, ovoid trunk, which is crowned with a whorl of rich dark-green pinnate leaves several feet in length. An excellent decorative plant, which is best grown in sandy loam.

58410 to 58412. MIMOSA spp. Mimosaceæ.

These are fine ornamental species growing in very sandy soil. (*Purpus*.)

58410. MIMOSA SOMNIANS Humb, and Bonpl.

A tropical American mimosa, usually herbaceous but often somewhat shrubby, armed with a few short spines and having white or pinkish flowers.

58411. MIMOSA ASPERATA L. No. 6.

58412. MIMOSA Sp.

58413 to 58424.

From Ladakh, Kashmir, lndia. Seeds collected by H. T. Cowling at the request of H. V. Harlan, Bureau of Plant Industry. Received December 7, 1923. Notes by Mr. Cowling.

58413. Brassica sp. Brassicaceæ.

(No. 4.) A plant from which the Ladakh natives obtain an oil; collected at 15,000 feet altitude.

58414. ERUCA SATIVA Hill. Brassicaceæ.

(No. 7.)

For previous introduction see S. P. I. No. 46501. 58415. HORDEUM VULGARE PALLIDUM Seringe.

Poaceæ. Six-rowed barley.

(No. 2.) Tibetan barley from an altitude of 10,000 to 13,500 feet. $\,$

58416 to 58418. HORDEUM VULGARE COELESTE L. Poaceæ. Naked barley.

58416. (No. 12.) From Himsa Kharbu.

 $58417. \ (\mbox{No. 1.})$ Collected at an altitude of $14,000 \ \mbox{feet.}$

58418. (No. 13.) From Jhirla.

58419. LATHYRUS SATIVUS L. Fabaceæ.

Bitter vetch.

(No. 3.) Collected at an altitude of 11,000 to 13,000 feet.

58420 and 58421. MEDICAGO SATIVA L. Fabaceæ. Alfalfa.

58420. (No. 5.) Collected at an altitude of 11,500 to 15,000 feet.

58413 to 58424—Continued.

58421. (No. 3.) A type raised in Ladakh for sheep and horses.

58422. PISUM SATIVUM L. Fabaceæ. Pea. (No. 9.) Collected at an altitude of 11,500 to 13,000 feet.

58423. TRITICUM AESTIVUM L. (T. vulgare Vill.)
Poaceæ. Common wheat.

(No. 10.) Collected at an altitude of 11,500 to 14,000 feet.

58424. VICIA FABA L. Fabaceæ. Broad bean. (No. 6.) Collected at an altitude of 11,500 to 13,000 feet.

58425 to 58427.

From Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received December 12, 1923. Notes by Mr. Rock.

58425. MECONOPSIS DELAVAYI Franch. Papaveraceæ.

(No. 9377. September, 1923.) This is one of the prettiest blue poppies of the Likiang Snow Range, where it grows in moist meadows and on gravelly slopes at altitudes of 11,000 to 12,500 feet, usually in small groups of 20 or more. The plants are 6 to 10 inches in height, with large drooping purplish indigo-blue flowers.

58426. PRIMULA DRYADIFOLIA Franch. Primulacese

(No. 9862. September, 1923.) A very handsome, rather uncommon primrose which forms cushions in moist rocky places on the eastern slopes of the Likiang Snow Range at an altitude of 15,000 feet. The plant is only 4 or 5 inches high, with spatulate leaves, golden below, and large rich-crimson purple-tinged flowers, which appear from June to August.

58427. TROLLIUS sp. Ranunculaceæ.

(No. 9651. September, 1923.) A very showy plant about 2 feet high which grows in moist alpine meadows on the eastern slopes of the Likiang Snow Range at altitudes of about 12,000 feet, also on Haba Shan, north of the Yangtze bend. The leaves are basal, and each plant bears about 10 large deep golden-yellow flowers 2 inches or more in width.

58428 to 58431.

From Asnieres, Seine, France. Seeds presented by René Bourgeois. Received December 29, 1923.

58428. PEUCEDANUM OSTRUTHIUM (L.) Koch. Apiaceæ.

A perennial herb native to the French Alps. The acid aromatic root is utilized for the preparation of some kinds of Swiss cheese. (Adapted from Mueller, Select Extra-Tropical Plants, p. 366.)

For previous introduction see S. P. I. No. 52860.

58429 and 58430. PHASEOLUS VULGARIS L. Fabaceæ. Common bean.

These are considered by Mr. Bourgeois to be the best stringless beans in France.

58429. Var. Phoenix. 58430. Var. Progres.

58431. Rumex alpinus L. Polygonaceæ. Sorrel.

The leaves are eaten like spinach, according to Mr. Bourgeois, and an infusion of the roots is used as a cough remedy.

58432 to 58434. Musa spp. Musaceæ. Banana.

From Honolulu, Hawaii. Shoots presented by Willis T. Pope, horticulturist, Hawaii Agricultural Experiment Station. Received December 28, 1923.

58432 to 58434—Continued.

(L.) Kuntze

58432. Musa fehi Bert. Fehi banana.

Fehi. An upright-fruiting Hawaiian variety with red fruits. The young shoots are very long and slender. (Pope.)

For previous introduction see S. P. I. No. 54673. 58433 and 58434. Musa paradisiaca sapientum

58433. Lady's-Finger. The Hawaii Experiment Station obtained its first offshoot of the Lady's-Finger variety March 21, 1912, from E. W. Rowell, since deceased, who lived on Vineyard Street, Honolulu. The station records give no information as to where the original plants in Hawaii came from. The plant is well known in Costa Rica, Jamaica, and British and French Gwies.

original plants in Hawaii came from. The plant is well known in Costa Rica, Jamaica, and British and French Guiana.

The Lady's-Finger banana is generally described as a variety of superior flavor, but on account of tenderness is a poor shipper. W. Fawcett in a recent publication, "The Banana," says that in British Guiana, where there has been great loss, ranging from 25 to 75 per cent of the Jamaica variety (Bluefields), from the fungus disease known as "Panama disease," the Lady's-Firger has not been attacked.

Plant: At maturity of fruit the plant is about 20 feet tall, trunk rather slim; withstands considerable wind, indicating good root system. With good culture, offshoots are fairly abundant; outer trunk sheaths appear dark with reddish brown streaks. Foliage: Dark green, leaf petioles greenish with edges tinged light yellow; blade averages about 7 feet in length, 14 inches wide, dark green above, dull green below. Flowers: Terminas spike on long stout flower stalk, which begins to turn downward on emerging from the trunk; spathe greenish, bracts which cover undeveloped flower hands purplish and with frosted bloom outside, reddish brown inside floral parts pale yellow with calyx split at margin into four or five parts which are bright yellow and curved outward. Fruits: Bunch long, slim, very compact. Average weight of Hawaiian-grown specimens 36 pounds, 10 to 22 hands; number of bananas to the hand vary from 13 to 20 from extreme to base, number of bananas to the bunch, usually over 200. Individual bananas 4 to 5 inches long, spindle shaped, apex beaked, attached end of stem three-fourths to 1 inch long, skin light yellow, thin, tender; pulp, yellow, melting, of good subacid flavor, placenta of 3-celled overy very rudimentary. (Pope.)

58434. Popoulu. A well-known variety of cooking banana, common in the Honolulu markets. The plant is of medium height. The stem is green with a slight tendency to pinkish tints on the petioles. The scape is rather slender; the bunch itself is of medium size. There are 8 to 10 fruits per hand. The fruits are short, thick, rounded, and blunt at the ends. This banana is of good quality when cooked; the flesh is firm and sweet. Other members of the Popoulu group are: Kaio, Hua moa, Moa, Nou, and Lahi. (Plant World, vol. 21, p. 6.)

58435 to 58441.

From Tientsin, China. Seeds presented by J. C. Huston, American consul in charge. Received November 28, 1923. Notes by Mr. Huston.

58435. Gossypium sp. Malvaceæ. Cotton.

White cotton from Chinhsien, which is sown the latter part of April and ripens the latter part of October. The average yield per mow (about one-sixth of an acre) is 100 catties (approximately 800 pounds per acre).

58435 to 58441—Continued.

58436. MEDICAGO SATIVA L. Fabaceæ. Alfalfa.

From Tientsin, where it is sown early in July. It matures the following June. The average yield per mow is 2,000 catties (approximately 7 long tons per acre).

58437. NICOTIANA TABACUM L. Solanaceæ

Tobacco.

From Shaho. Planted the first part of April, transplanted and harvested late in September. The average yield per mow is 100 catties.

58438. ORYZA SATIVA L. Poaceæ. Rice.

Large, white-bearded water rice, from Tientsin. This variety is sown the latter part of March and harvested the latter part of September. The average yield per mow is 2 piculs (approximately 1,600 pounds per acre).

58439. Soja Max (L.) Piper. (Glycine hispida Maxim.) Fabaceæ. Soy bean.

Large black beans from Chinghaihsien; sown the latter part of April and harvested the first part of September. The average yield per mow is I picul (approximately 800 pounds per acre).

58440. TRITICUM AESTIVUM L. (T. vulgare Vill.)
Poaceæ. Common wheat.

From Feihsiang; sown late in September and harvested the following June. The average yield per mow is 1 picul (approximately 800 pounds per acre).

58441. ZEA MAYS L. Poaceæ. Corn.

Yellow corn from Peking; sown the latter part of April and harvested the latter part of August. The average yield per mow is $1\frac{1}{2}$ piculs (approximately 1,200 pounds per acre).

58442 and 58443. Gossypium spp. Malvaceæ.

From South America. Seeds presented by E. L. Prizer, Bureau of Plant Industry. Received December 5, 1923.

Collected in Para, Brazil, October 31, 1923.

Introduced for cotton specialists.

58442. Gossypium sp.

Cotton.

58443. Gossypium sp. Kidney cotton.

58444. Persea americana Mill. (P gratissima Gaertn. f.) Lauraceæ.

Avocado.

Growing at the Plant Introduction Garden, Miami, Fla. Numbered December, 1923.

Alfred A. Winslow, consul general at Guatemala City, sent to this office in 1904 an avocado seed which was planted at the Miami Plant Introduction Garden [S. P. I. No. 19978]. It grew into a tree which bore its first fruits in 1911. A few fruits from the first crop were sent to P. H. Rolfs at Gainesville, Fla., with the suggestion that he save the seeds. This was done, and two seedlings were inarched on old trees at Buena Vista, near Miami, where Professor Rolfs owned property at that time. One of these two fruited in 1917 and was called Winslowson by Mr. Simmonds, superintendent of the Miami garden, and young trees of the variety were soon in the hands of nurserymen.

the hands of nurserymen.

In all probability the variety is a cross between
the Guatemalan and West Indian races. The seed
parent, Winslow, is a typical Guatemalan, round,
small, and having a very hard shell, rough on the
exterior. The pollen parent was probably one of
the West Indian varieties cultivated at the Miami
garden. Winslowson ripens earlier in southern
Florida than most of the true Guatemalans, November being its season, though the fruits may hang
on the tree as late as January. It is a productive
sort and a sturdy grower. The fruit is large,
attractive, and of very satisfactory quality.

58445. SANDORICUM KOETJAPE (Burm. f.) Merr. (S. indicum Cav.). Meliaceæ. Santól.

From Dominica, British West Indies. Seeds presented by Joseph Jones, Botanic Garden. Received December 22, 1923.

The santól is a Philippine tree which becomes 80 feet tall in its native country, with trifoliolate, hairy leaves and greenish yellow or straw-colored flowers. The chief value of the tree resides in its yellowish fruit, which is rounded or flattened, about 2 inches in diameter, with rather large seeds inclosed in translucent, acid, edible pulp of good flavor. When peeled, quartered, and cooked in sirup the fruits make a delicious preserve. (Adapted from Brown, Wild Food Plants of the Philippines, p. 86.)

This tree is not suited for cultivation in the United States except perhaps in the warmest parts of Florida. It is of interest for trial in Porto Rico, the Canal Zone, and Hawaii. Its fruit is not rated very high among those which are eaten in the Asiatic Tropics.

58446 to 58454. Musa paradisiaca sapientum (L.) Kuntze. Musaceæ. Banana.

From Honolulu, Hawaii. Shoots presented by Willis T. Pope, horticulturist, Hawaii Agricultural Experiment Station. Received December 22, 1923.

58446. The Bluefields, also known as the Jamaica, is one of the most important banana varieties from a commercial standpoint. It is the chief banana of the American trade. The plants are large, and the fruits are of fine appearance, of fair flavor, and well placed on the bunch for convenient handling. It is excellent for shipping. (Adapted from Bulletin 7 of the Hawaii Agricultural Experiment Station, p. 42.)

58447. The Brazilian, as it is known locally, is considered by some authorities as the finest variety in the Hawaiian Islands for eating raw. It was introduced into Hawaii from Tahiti about 1855 and probably is the same as the variety known in Java as Pisang rajah or Pisang medji, the "dessert banana" of Java. The plant is a vigorous grower, 25 to 35 feet high, roots firmly and withstands winds, ratoons

58446 to 58454—Continued.

freely, and serves as a windbreak for more delicate varieties. The flower end of the fruit is drawn out into a kind of beak. The skin is yellow, easily separating from the fruit. The variety is not satisfactory for shipping because the fruit falls from the bunch. (Adapted from Bulletin 70 of the Hawaii Agricultural Experiment Station, p. 45.)

58448. Chamaluco. The plant is from 10 to 15 feet in height, with medium-sized leaves, and when grown in fertile soil the bunches of fruit are rather large. There are two types, one with green and the other with gray fruits. The greater part of these fruits are eaten cooked at the time when other varieties are ripe. (Adapted from Bulletin 25, Departamento de Agricultura y Trabajo, Porto Rico, p. 19.)

For previous introduction see S. P. I. No. 55246.

58449. Chinese. A variety introduced from Tahiti into the Hawaiian Islands about 1855. The plant is of very low growth, the fruit of good flavor, and the bunch of large size. It is an excellent variety for shipping, but will not stand as rough handling as the Jamaica. (Adapted from Bulletin 7 of the Hawaii Agricultural Experiment Station, p. 44.)

58450. Ice Cream.

For previous introduction see S. P. I. No. 55247.

58451. Largo. Introduced into Hawaii from Mexico. The plant is of medium height and the fruits, borne in long-stemmed bunches, have buttery pink flesh of fair flavor. (J. E. Higgins, Bulletin 7, Hawaii Agricultural Experiment Station.)

For previous introduction see S. P. I. No. 55250.
58452. Platano. 58453. Parto Rico.

For previous introduction see S. P. I. No. 55251.

58454. Red Cuban. This is the proper name of the largest sized variety of the various red bananas—large both as to plant and fruit. A well-grown bunch has 8 to 10 hands and individual fingers from 2 to 2½ inches in diameter. This is the red banana of commerce. (Goldsmith H. Williams, Crescent City, Fla.)

For previous introduction'see S. P. I. No. 55252.

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